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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/711,651      | 11/13/2000  | Keeichi Nito         | 09792909-4679       | 7866             |

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EXAMINER

CHOI, WILLIAM C

ART UNIT PAPER NUMBER

2873

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |              |
|------------------------------|-----------------|--------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s) |
|                              | 09/711,651      | NITO ET AL.  |
|                              | Examiner        | Art Unit     |
|                              | William C. Choi | 2873         |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on 23 October 2002.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 6-8, 10, 13-15, 19, 73-86, 111-113, 115, 118-120, 124 and 149-164 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 6-8, 13-15, 19, 111-113, 118-120, 124, 163 and 164 is/are allowed.

6) Claim(s) 73 and 149 is/are rejected.

7) Claim(s) 10, 74-86, 115 and 150-162 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*J. Choi*  
J. Choi  
Primary Examiner

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 13 November 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)  The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

|  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 73-86 and 149-162 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

Claims 10 and 115 are objected to because of the following informalities: Claims 10 and 115 are dependent on cancelled claims 9 and 114 respectively. Examiner suggests applicant correct the dependencies of these claims to reflect dependencies upon independent claims 6 and 111 respectively. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 73 and 149 are rejected under 35 U.S.C. 102(e) as being anticipated by Furukawa et al (U.S. 6,411,576 B1).

In regards to claim 73, Furukawa et al discloses an optical pickup device (column 2, lines 39-44 and column 5, line 33, Figure 2, "13") comprising: a light modulation apparatus including a liquid crystal device (column 5, line 42, Figure 2, "10"), a drive pulse generation unit for driving said liquid crystal device (column 5, lines 56-58, Figure 2, "27"- "29"), and a pulse width control unit for modulating a pulse width of each drive pulse to be applied to said liquid crystal device (column 5, lines 57-58), thereby inherently controlling a transmittance of light made incident on said liquid crystal device; wherein said light modulation apparatus (Figure 2, "10") is disposed in an optical path (column 5, line 36, Figure 2, "B") of an optical system of said optical pickup apparatus (Figure 2, "13").

In regards to claim 149, Furukawa et al discloses a method of driving an image pickup apparatus in which a liquid crystal device (column 5, line 42, Figure 2, "10") is disposed in an optical path (column 5, line 36, Figure 2, "B") of an optical system of said optical pickup apparatus (column 2, lines 39-44 and column 5, line 33, Figure 2, "13"), comprising the step of: modulating a pulse width of each drive pulse to be applied to said liquid crystal device (column 5, lines 57-58), thereby inherently controlling a transmittance of light made incident on said liquid crystal device.

***Allowable Subject Matter***

Claims 6-8, 13-15, 19, 111-113, 118-120, 124, 163 and 164 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in independent claim 6 (and dependent claims 7, 8, 13-15 and 19): a light modulation apparatus as claimed specifically wherein luminance information of light emerged from the liquid crystal device is fed back to the control circuit unit, and the pulse width of each drive pulse is modulated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

The prior art fails to teach a combination of all the claimed features as presented in independent claim 111 (and dependent claims 112, 113, 118-120 and 124): a method of driving a light modulation apparatus including a liquid crystal device as claimed specifically wherein luminance information of light emerged from the liquid crystal device is fed back to the control circuit unit, and the pulse width of each drive pulse is modulated in synchronization with a clock generated by said drive circuit unit on the basis of a control signal supplied from said control circuit unit.

The prior art fails to teach a combination of all the claimed features as presented in claim 163: a light modulation apparatus as claimed specifically comprising a polarizing plate that is disposed in a movable portion of a mechanical iris in a manner whereby it is movable in or from the optical path by operation of said movable portion of said mechanical iris.

The prior art fails to teach a combination of all the claimed features as presented in claim 164: a method of driving a light modulation apparatus as claimed specifically wherein a polarizing plate is disposed in a movable portion of a mechanical iris in a manner whereby it is movable in or from the optical path by operation of said movable portion of said mechanical iris.

Claims 10 and 115 would be allowable if rewritten to overcome the objections set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 74-86 and 150-162 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claim 74: an image pickup apparatus as claimed specifically wherein the pulse width of each drive pulse is modulated with its pulse height kept constant.

The prior art fails to teach a combination of all the claimed features as presented in claim 75: an image pickup apparatus as claimed specifically wherein an average per unit time of positive and negative pulse heights is preferably near zero.

The prior art fails to teach a combination of all the claimed features as presented in claim 76: an image pickup apparatus as claimed specifically wherein the modulation of the pulse width of each drive pulse is performed in such a manner that the waveform of each drive pulse is present in a period of a basic frequency.

The prior art fails to teach a combination of all the claimed features as presented in claim 80: an image pickup apparatus as claimed specifically wherein said liquid crystal device is a guest-host type liquid crystal device.

The prior art fails to teach a combination of all the claimed features as presented in claim 83: an image pickup apparatus as claimed specifically comprising a polarizing plate disposed in an optical path of light made incident on said liquid crystal device.

The prior art fails to teach a combination of all the claimed features as presented in claim 86: an image pickup apparatus as claimed specifically wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

The prior art fails to teach a combination of all the claimed features as presented in claim 150: a method of driving an image pickup apparatus as claimed specifically wherein the pulse width of each drive pulse is modulated with its pulse height kept constant.

The prior art fails to teach a combination of all the claimed features as presented in claim 151: a method of driving an image pickup apparatus as claimed specifically wherein an average per unit time of positive and negative pulse heights is preferably near zero.

The prior art fails to teach a combination of all the claimed features as presented in claim 152: a method of driving an image pickup apparatus as claimed specifically wherein the modulation of the pulse width of each drive pulse is performed in such a

manner that the waveform of each drive pulse is present in a period of a basic frequency.

The prior art fails to teach a combination of all the claimed features as presented in claim 155: a method of driving an image pickup apparatus as claimed specifically wherein the pulse width of each drive pulse is modulated in synchronization with a clock generated by a drive circuit unit on the basis of a control signal supplied from a control circuit unit.

The prior art fails to teach a combination of all the claimed features as presented in claim 156: a method of driving an image pickup apparatus as claimed specifically wherein said liquid crystal device is a guest-host type liquid crystal device.

The prior art fails to teach a combination of all the claimed features as presented in claim 159: a method of driving an image pickup apparatus as claimed specifically wherein a polarizing plate is disposed in an optical path of light made incident on said liquid crystal device.

The prior art fails to teach a combination of all the claimed features as presented in claim 162: a method of driving an image pickup apparatus as claimed specifically wherein a drive electrode of said liquid crystal device is formed at least over the entire region of an effective light transmission portion.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (703) 305-

3100. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

W.C.  
William Choi  
Patent Examiner  
Art Unit 2873  
January 7, 2003

L.B.  
Loha Ben

Primary Examiner